DOCUMENT RESUME

ED 244 235 CS 007 627

AUTHOR Matt, Stephen R.
TITLE Reading Teacher's Text Selection for Industrial Arts and Other Technical Fields.
PUB DATE Dec 83
NOTE 13p.; Paper presented at the Annual Meeting of the American Reading Forum (4th, Sarasota, FL, December 8-10, 1983).
PUB TYPE Speeches/Conference Papers (150) -- Guides - Non-Classroom Use (055)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Content Area Reading; *Evaluation Criteria; *Industrial Arts; Postsecondary Education; Readability; Reading Teachers; Secondary Education; *Teacher Role; *Technical Education; Textbook Content; Textbook Research; *Textbook Selection; Trade and Industrial Teachers; Vocational Education

ABSTRACT

To provide learners with the most reliable information, individuals and committees responsible for text selection examine texts for classroom use in steps. Since very few people have the specialized knowledge of all the technical fields like drafting, electronics, or graphics that make up the field of Industrial Arts, a committee is required to review available books, judge their accuracy, and evaluate their features. Among the things the committee should examine in a textbook are its (1) explanation of technical vocabulary, (2) accurate representation of symbols, (3) illustrations, and (4) visual quality. Other factors that the review committee can take into account include reading level of the text, usability of the index, and the number and quality of illustrations and photographs. A survey of industrial arts teachers in Georgia revealed that the above, along with content, cost, and copyright date, were among the most important evaluative data used in text selection. (CRH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED244235

Reading Teacher's Text Selection for Industrial Arts and Other Technical Fields

Stephen R. Matt - University of Georgia

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED E.

Stephen R. Matt

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CS007627

Reading Teacher's Text Selection for Industrial Arts and Other Technical Fields

Stephen R. Matt - University of Georgia

Evaluation of textbooks to determine their applicability for classroom use has become a series of examination steps by various committees and reading specialists. The evaluation is done by individuals and groups who function as screening agents intent on providing learners with the best and most reliable information which is available at the time. When committees are faced with the task of evaluating textbooks for use in most academic classes, the steps fall into a systematic pattern. However, can these same steps be used for evaluating textbooks used in a technical field or are the books used in a vocational setting somehow different?

A technical field is defined by Webster as a practical field organized on scientific principles. It would include programs ranging from Business Education to Industrial Arts to Vocational Welding. The entire field of vocational education encompasses hundreds and hundreds of books. Narrowing the scope of these categories might help provide a better understanding of the problem. Consider the technical books used in the Industrial Arts field alone. These would include about a dozen progams such as, Drafting, Graphics, Electricity, Electronics, Metalworking, Power, and Woodworking. There are over a hundred books in these fields alone. A technical specialist with knowledge in all these fields is scarce indeed. For this reason a

committee is required to review books, judge their accuracy, and evaluate their numerous other features.

Books dealing with Industrial Arts and other vocational subject matter must overcome several unique problems. First, they must cover a wide range of technical content; the trademark of each particular course. For example, an electricity/electronics text must cover material dealing with simple concepts of illustrating electron flow, as well as the more complex problem of dealing with transistors, integrated circuits, diodes, and solid state logic circuits. To most people these terms alone represent a whole new vocabulary. If the students using these books are to be successful they must first learn the new vocabulary and somehow become comfortable with it.

Second, after learning the vocabulary, readers of technical textbooks must also become experts at the symbol recognition. This would include the symbols for machining, welding, drafting, electronics and many others. At first glance, some of the symbols might appear to be identical. For example, compare two symbols, those for a diode and a silicon controlled rectifier. Although they look similar, each of them is a distinctively different device. Both are completely unique electronic components (the diode can carry a fraction of an amp while the rectifier may carry over a hundred amps). However, the only difference between their symbols is one small line. Therefore, technical books including symbols must be painstakenly proofread by the author, editors and other experts providing technical assistance.

Third, the illustrations used in technical books must be kept current. Books in these fields can become out-of-date very rapidly. Technical advances are becoming more and more important as this nation's industries strive to complete their transition into the area of high technology. Advances in technology are coming so quickly that before the manuscript leaves the author's typewriter (word processor/computer) the technical content might already be dated.

Fourth, students taking vocational education courses at the high school level have traditionally been subjected to a lot of criticism. Many of them have already been classified as failures. One reason for getting this classification is because the majority are viewed as not being "college bound." Instead of being headed for further formal education, to which many of the counselors, librarians, and administrators relate, these students are headed for jobs.

All too often there is a tendency to forget that eventually even the "college bound" also take jobs. The major difference is the fact that people taking industrial arts and vocational education classes, somehow, just don't meet the expectations of the so called "intellectuals." Instead of being the studious types who do well in Math, English, and Science classes, many of these students do not seem to measure up in these disciplines. Instead, vocational students seem to derive a considerable amount of their learning by practicing those skills which are manipulative in nature.

This "learning by doing" also shows up in their textbooks. If you

look at traditional math, and English books, you find they contain few photographs. Certainly they contain some drawings and illustrations to break up the monotony of page after page of text. However, very little of the desired learning is expected to take place from those books by visual means. Too often many sophisticated educators think that visual learning is below their dignity. Abstract learning is somehow thought to be "better." Afterall, wasn't that the way ancient philosophers taught and isn't that the way many of the academic subjects are taught today? Learning by doing must, therefore, be sneered at and thought to be geared only for those with "lesser abilities."

What qualities should be found in a textbook which is to be used in the Industrial Arts and other Vocational fields? Should it contain numerous illustrations, charts, photographs or should it be written without them?

One of the truly important things which MUST be included in an Industrial Arts or Vocational textbook is visual learning material. Along with the descriptive material, the key to a good textbook in this field is the combination of number, quality, and selection of the pieces artwork. The author must use photos and other artwork as illustrations to provide the clues which make learning easier.

Photos are usually less costly than artwork to produce. Most of the publishers in the vocational field require that their authors make arrangements for photos with vendors. These are the people who

manufacture or otherwise produce the machines and equipment so necessary to the vocational field. Publishers prefer glossy photos because they are easy to reproduce and do not require the services of a freelance artist. In some instances, the publisher may have a staff of artists to do this work. The more complex the illustrations, the greater the cost of the publication. Most publishers in the vocational/industrial arts areas want to target their books at less than $20. Prices higher than that puts too much of a strain on most school budgets and thus reduces sales. A book in this field are expected to have sales of 5,000 or more copies a year to hold its own in the marketplace.

There are a number of ways that can be used to check the worthiness of a text for these fields. Many of the teachers in the field already know how this can be done. Some of the most common ways text selection committes use to check a book include the following:

* reading level; word size and sentence length
* usability of its index
* quality of illustrations and drawings
* number of photographs

The Vocational Reading Power Project in 1972 analyzed a number of technical books to ascertain their reading level. This study laid the groundwork for the use of reading level as one of the major criterion for the adoption of technical textbooks by many schools. Since that time most of the technical publishers have taken steps to ensure that the reading level of its books were matched to those people using

them in a particular field.

The difficulty with reading level, however, has presented a unique problem to the students enrolled in vocational programs in many high schools. A number of high school advisors suggest that students who are doing poorly in English, Math, and other courses should enroll in technical programs. Why should a student who is having difficulty reading "normal" material be advised to enroll in a course where they must learn an entirely new technical vocabulary? The general concensus seems to indicate that all "less able readers" should be able to do better in a technical environment than they could in an academic program. Is this really true or do students succeed because of the "practical knowledge" learned through "hands-on" experience?

A survey was taken with a group of Industrial Arts teachers in the State of Georgia to check their beliefs on textbooks.

Let's begin by examining some information about the participants. First, where did they get their Industrial Arts training? Of the people that responded the various percentages were as follows:

Percent	Obtained Training In The
78	Southeast
15	Midwest
6	East
2	Southwest
0	West

Rounding off produced results of 101 percent.

Second, the group was asked if they had received any training in selecting textbooks as part of their college training. Slightly more than 73 percent indicated that they received ABSOLUTELY NO TRAINING in selecting textbooks. Of the 27 percent who did receive some training eighty six percent indicated that either they received less than five hours of training or it was covered as part of a college curriculum class.

Third, the group was asked if they ever participated as a member of a text selection committee. The breakdown of their responses indicated the following:

Percent	Text Selection Committee
52	Yes
48	No

Following up on the training aspect of the survey, 62 percent of those who did participate indicated that they recieved absolutely no training for this task. Of the 38 percent who did receive training, the various amounts of training were listed as:

Percent	Type/Amount of Training
52	verbal instructions only
17	written instructions only
10	less than 1 hour
10	1 to 3 hours
10	4 hours or more

What are the implications of these data? The results of this survey indicates that there is a serious lack of training for those people appointed to the various committees which select our textbooks.

However, there were other responses which show what these same people felt were the important points of their textbooks. When asked to rank five separate groups of items dealing with books they responded in the following manner.

The first question in this group asked each person to rank five items in their order of importance. These items dealt with the selection an Industrial Arts book which they were planning to use in the classroom. The participants listed the order of importance as:

Ranking	Item
1	contents of book
2	date of publication
3	reputation of author
4	cost of book
5	reputation of publisher

The contents of a book was rated as the most important item on the list by 88 percent of those responding. Interestingly enough 44 percent indicated that the reputation of the publisher was the least important item on the list.

Second, when asked to rank items dealing with the layout of the book, the participants responded by placing the items in this order:

Ranking	Item
1	include numerous photographs and drawings
2.5	be well indexed
2.5	contain a dictionary of terms
4	use large readable print
5	be printed in at least two colors

Third, when asked to rank items dealing with the contents of the book, the participants placed the items in this order:

Ranking	Item
1	contain numerous examples
2	closely match the material which I teach
3	be written at the 7th to 9th grade reading level
4	start each chapter with the behavioral objectives to be learned
5	match our county/state curriculum guides

Fourth, when asked to rank items dealing with the cost of the book, the participants placed the items in this order:

Ranking	Item
1	$10 to $15
2	is not important as long as it covers the material
3	should be less than $10
4	$16 to $20
5	$20 or more

Finally, when asked to rank items dealing with the publication date

of the book, the participants ranked the items in this order:

Ranking	Item
1	should be less than 5 years old
2	is not important as long as it covers the material
3	can be older than 5 years
4	is controlled by our selection committee
5	it is not important

The 25 ranked items in the survey were also analyzed to see if there were any statistical differences between those Industrial Arts teachers who served on text selection committees and those who had never served on such a committee.

Using chi square, the only item which showed any statistical difference was the reputation of the publisher. Those who had served on text selection committees felt it was the least important feature of a book while those who had not served placed slightly higher importance on the reputation of the publisher. None of the remaining items showed any statistical significance between the two groups. These statistics indicate that Industrial Arts teachers who have been on text selection committees and those who have not, rated textbooks in the same manner.

In summary, the items in this survey which the participants felt were most important were:

* the contents of the book
* the inclusion of numerous photographs and drawings

* that it contain numerous examples
* that it cost between $10 to $15
* and that it be less than 5 years old

The items in the survey which the participants ranked as least important were:

* reputation of the publisher
* that it be printed in at least two colors
* that it match their county/state curriculum guides
* that it cost $20 or more

Reading specialists must be cognizant of these features if they are to be successful in helping technical teachers select textbooks.